

## Survey of water bodies, study of Conductivity and pH of water of Bogolu Mandalam, Nellore District, Andhra Pradesh, India.

Rajasubramanian Devarajan<sup>1</sup>, Ramu.L<sup>2</sup>, G.Guruswamy Setty<sup>3</sup> and Narendra.K\*

Department of Botany, Annamalai University, AnnamalaiNagar,  
Chidambaram, Tamilnadu, India<sup>1</sup>

Department of Physics, MES College of arts Commerce and Science, Karnataka, India<sup>2</sup>

Academic Consultant, Department of Biotechnology, Dravidian University, Kuppam, AP, India.<sup>3</sup>

Department of Biology, MES College of arts Commerce and Science, Karnataka, India\*

**Corresponding author email:** narendrakuppan@gmail.com

### ABSTRACT

*Our Country forests are transforming into concrete jungles, Nellore district, Andhra Pradesh is rice bowl of south India its present contribution from India rice production is significant but still there is no published data on water resources. This research derails survey conducted at the district to study the water resources and GPS, water conductivity and pH was studied. Nellore District water bodies are in abundance GPS, Latitude and Longitude recoded, pH and conductivity was recorded.*

**Key words:** GPS, water bodies, Longitude, pH and conductivity

Received 17.12.2018

Revised 28.01.2019

Accepted 19.02.2019

### CITATION OF THIS ARTICLE

R Devarajan, Ramu.L, G.Guruswamy Setty and Narendra.K. Survey of water bodies, study of Conductivity and pH of water of Bogolu Mandalam, Nellore District, Andhra Pradesh, India.. Int. Arch. App. Sci. Technol; Vol 10 [1] March 2019 : 29-32

### INTRODUCTION

Soil is nature's gift to nurture the plants, which intern nourishes the biotic community thus ecosystem. Now a day's this soil as become pool for various, toxins, syntactic non degradable chemicals, heavy metals etc. Soil as been polluted in all possible means, polluted water being reservoirs of chemicals heavy metals lets this chemical percolate into the soil. Polluted air caring all the toxin dust depositing on the soil, Human population explosion, rapid industrialization, increased deforestation, unplanned urbanization, scientific and technological advancement etc. have further hyped all kinds of pollution [1]. Water and soil becomes essential for growth of flora and fauna in any habitat as plants becomes the primary source for energy and fundamental of an ecosystem, all living organism are dependent on them no organism can live in opulence if the flora of the habitat is not taken care.

Growth of flora depends on water and soil these are the natural resources should be preserved, richness should be documented to know the suitability of plants to be grown in this habitat. There is no documented record for most of these valuable resources in many developing countries.

At several instances undefined, unnoticed destruction and human habitation have occurred in the places of this natural habitat of ponds, pools, lakes. These water bodies over human civilization have vanished.

## STUDY AREA

Nellore District, the Southernmost Coastal District of Andhra Pradesh lies between 13-30' and 15-6' of the Northern latitude and 70-5' and 80-15' of the Eastern Longitude and extending over an area of 13076 Sq.Kms, accounting for 4.75% of the total area of the state. It is bounded on the north by Prakasam District on the East by Bay of Bengal on the South by Chittoor District and Chengalpattu District of Tamilanadu and on the West by Veligonda Hills which separate it from Kadapa District.

Revenue Administratively the District is divided into 46 Mandals, covering Five Revenue Divisions with Head Quarters at Nellore, Gudur, Kavali, Atmakkur and Naidupeta. There are Five Municipalities namely Gudur, Kavali Venkatagiri, Atmakur and Sullurpet and one Municipal Corporation i.e. Nellore..

The district broadly 2 natural divisions from North to South. The eastern Half of the District adjoins coastal belt is fairly fertile and the western half of the district has low elevation towards west with large track of low shrub jungles diversified with rocky will stony plains.

The Pennar and Swarnamukhi are the principal rivers, besides the streams like Kandaleru and Boggeru.

### Climate and Rain fall

The climate of Nellore town is generally dry and salubrious. April and May are the hottest months and the hot winds generally last till the end of the June. As the Bay of Bengal is at a distance of 15 miles from the city, the sea breeze renders the climate of the city moderate both in winter and in summer. The hottest day falls in May with some shift to June during some years. The coolest day falls between the months of December and February. The southwest Monsoon is not very important for this town. Winds are from west and North – West during this season. This town and region depends mainly on the North – East monsoon. The North – East monsoon occurs along the East Coast of India during the month of October and continues till December. This period gives about 60% annual rainfall. The Normal Rainfall of the District is 1080 mm. During the year 2010-11 the actual Rainfall received was 1080 mm.

### Land Use

The total Geographical area of the District is 13.08 lakh Hectares. Of this 20.09% is forest area. The rest is distributed among Barren and Uncultivable Land (10.56%) and Land put into Non Agricultural uses (18.68%). The net area sown forms 25.96% while cultivable waste and fallow (current and old) lands Constitute 17.75%.

## MATERIAL AND METHODS

A survey was conducted at Vidavalur Mandalam at Nellore district the survey number hectors of water body was obtained and water sample was collected in non reactive Thermo Scientific Nalgene Certified Wide-Mouth Amber HDPE bottle with Closure and brought to the lab and pH was measured using digital pH meter and conductivity was measured using Elico CM180 conductivity meter.

## RESULT AND DISCUSSION

S.No	Water Body type	Village / Mandalam	Mandalam	GPS		pH	Conductivity / $\mu\text{S}/\text{cm}^{-1}$
				Latitude	Longitude		
1	Cheruvu	Kovurupalli	Bogolu Mandalam	N:14.46.724	E:079.59.979	6.2	1200
2	Cheruvu	Kovurupalli	Bogolu Mandalam	N:14.46.132	E:080.00.125	6.0	1100
3	Gunta	chennarayunipalem	Bogolu Mandalam	N:14.45.524	E:080.05.663	6.8	1200
4	Gunta	Mallayapalem	Bogolu Mandalam	N:14.45.926	E:080.05.065	6.5	1000
5	Cheruvu	chennarayunipalem	Bogolu Mandalam	N:14.46.847	E:080.04.297	6.1	1050
6	Cheruvu	Jadagogula (v), Enugulapayi Panchayiti	Bogolu Mandalam	N:14.48.394	E:080.02.696	6.0	1200

7	Cheruvu	Kollidinne	Bogolu Mandalam	N:14.49.256	E:080.02.624	6.8	1200
8	Gunta	Kollidinne	Bogolu Mandalam	N:14.49.656	E:080.02.989	6.9	1150
9	Gunta	Kollidinne	Bogolu Mandalam	N:14.49.344	E:080.02.879	6.7	1115
10	Gunta	Enugulapayi Village	Bogolu Mandalam	N:14.49.676	E:080.02.319	6.4	1025
11	Gunta	Enugulapayi Village	Bogolu Mandalam	N:14.49.218	E:080.02.409	6.5	1015
12	Cheruvu	Munganur Village	Bogolu Mandalam	N:14.48.969	E:080.01.073	6.8	1011
13	Gunta	Munganur Village	Bogolu Mandalam	N:14.48.776	E:080.01.053	6.7	1100
14	Gunta	Munganur Village	Bogolu Mandalam	N:14.48.545	E:080.01.103	6.6	1200
15	Gunta	Munganur Village	Bogolu Mandalam	N:14.48.643	E:080.01.588	6.8	1100
16	Gunta	Munganur Village	Bogolu Mandalam	N:14.48.768	E:080.01.850	6.3	1150
17	Gunta	Munganur Village	Bogolu Mandalam	N:14.48.401	E:080.01.197	6.9	1115
18	Gunta	Juvvala Dinne	Bogolu Mandalam	N:14.48.942	E:080.03.945	6.1	1025
19	Gunta	chennarayunipalem	Bogolu Mandalam	N:14.45.792	E:080.04.847	6.5	1200
20	Gunta	chennarayunipalem	Bogolu Mandalam	N:14.45.141	E:080.05.041	6.8	1100
21	Gunta	chennarayunipalem	Bogolu Mandalam	N:14.45.322	E:080.05.207	6.8	1100
22	Gunta	chennarayunipalem	Bogolu Mandalam	N:14.45.548	E:080.05.284	6.4	1200

22 different Gunta/Cheruvu are identified and GPS was recorded and pH and conductivity was noted. The “p” in the word pH stands for potential and the “H” stands for Hydrogen. A measure of acidity or alkalinity of water soluble substances (**pH** stands for ‘potential of Hydrogen’). A **pH** value is a number from 1 to 14, with 7 as the middle (neutral) point. Values below 7 indicate acidity above seven alkalinity and 7 is neutral. All the water samples examined are neutral [2-4].

**Conductivity** of water is the **water's** ability to conduct electricity. Common ions in **water** that conduct electrical current include sodium, chloride, calcium, and magnesium [5-6].

#### ACKNOWLEDGEMENT

We the authors thank government of Andhra Pradesh, Nellore district administrator officer, local administration (panchayat) and Dr. Supraja Dharini, Chair Person, TREE foundation, Chennai for their help and providing all data required or us to carry out the project. Without them this research would have been nil and void.

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